

Laboratory Initiatives Updates for Early Career Town Hall Attendees

by

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BERKELEY LAB
Lawrence Berkeley National Laboratory



Six Strategic Initiatives for Berkeley Lab Today:

MULTIDISCIPLINARY SCIENCE AND INFRASTRUCTURE 2020



Carbon Cycle 2.0



**Next Generation
Light Source**



**Biocampus and
Integrated Biosciences**



**Scientific
Computation**

COMMUNITY STEWARDSHIP



Community Relations



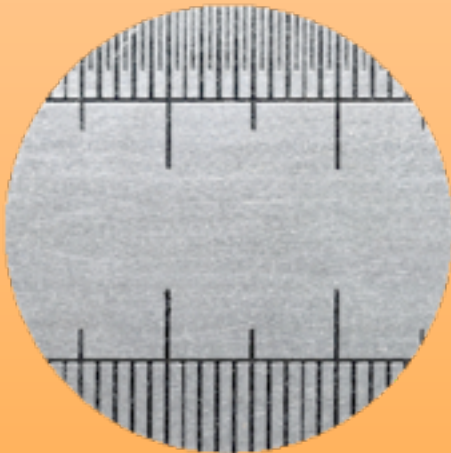
Safe & Efficient Lab



MULTIDISCIPLINARY SCIENCE 2020



Societal needs for technical solutions to energy and environment problems will intensify



Measurement tools will open new realms of inquiry

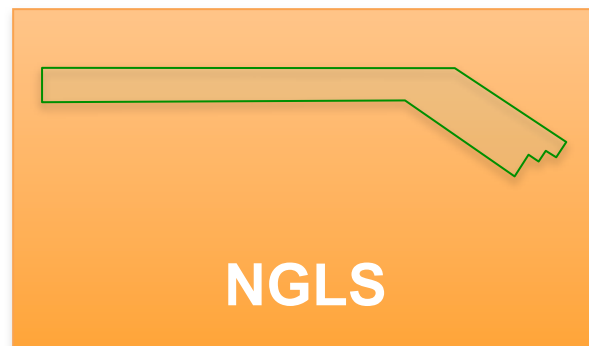
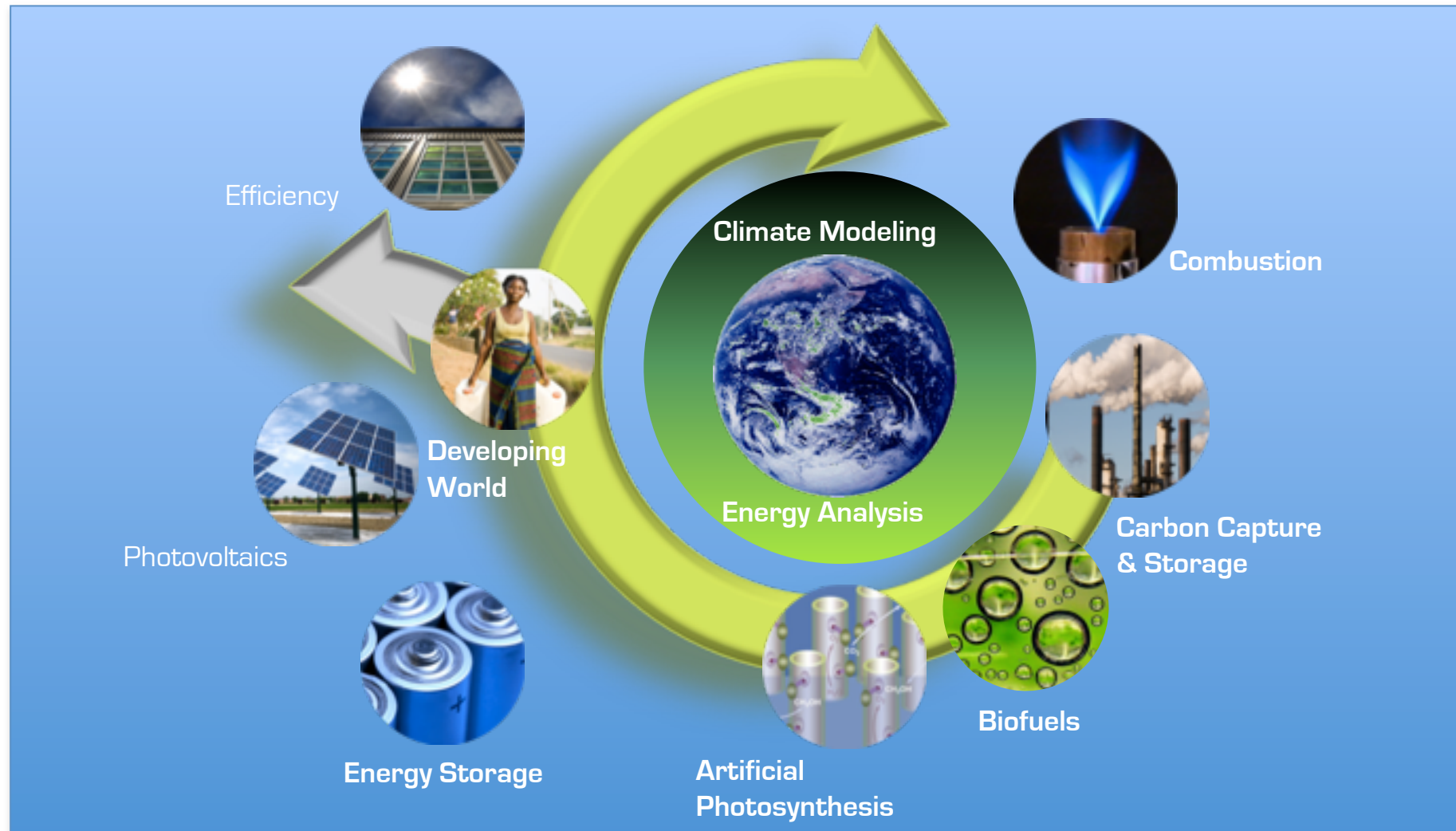


The biology revolution will deepen and impact other disciplines



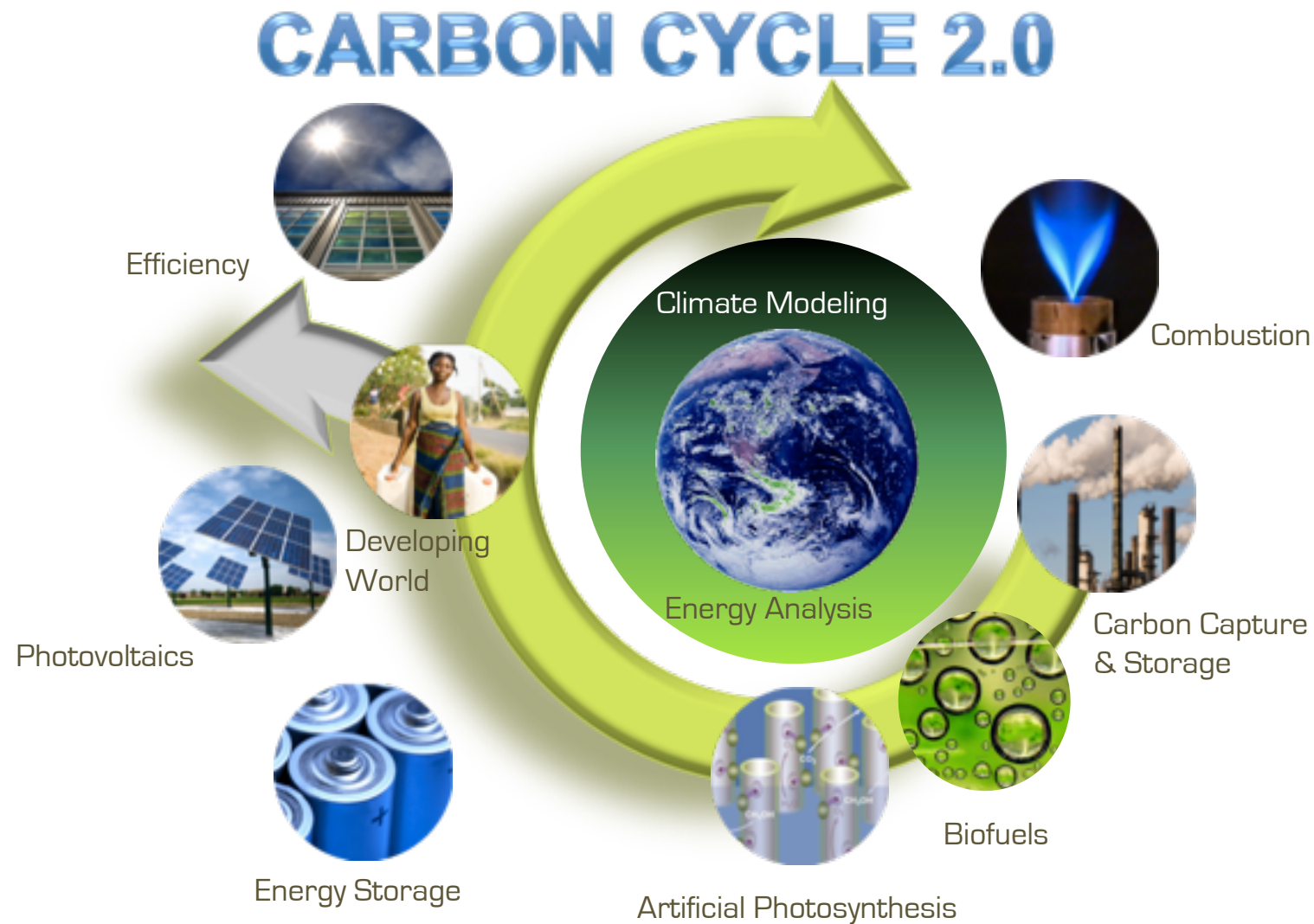
Reliance on computation will expand while massive data sets will challenge us

A vision for Berkeley Lab in 2020





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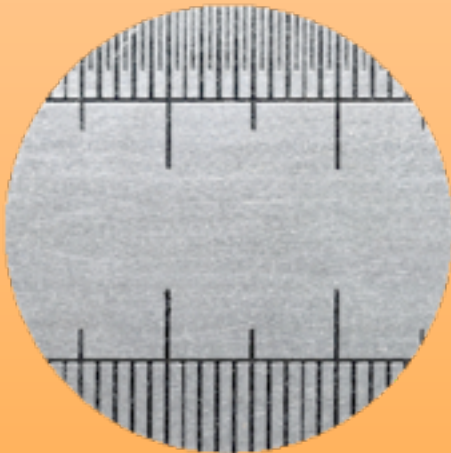


- Won: **solar fuels hub** and key partner in **Bay Area Photovoltaic Consortium**
- Won: **Advanced Biofuels Processes Development Unit**
- Won: **User Test Bed Facility for Low-Energy Buildings**
- Competing for: **energy storage hub** and **critical materials hubs**

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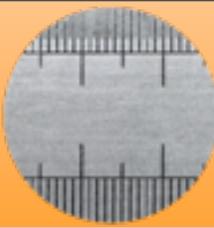


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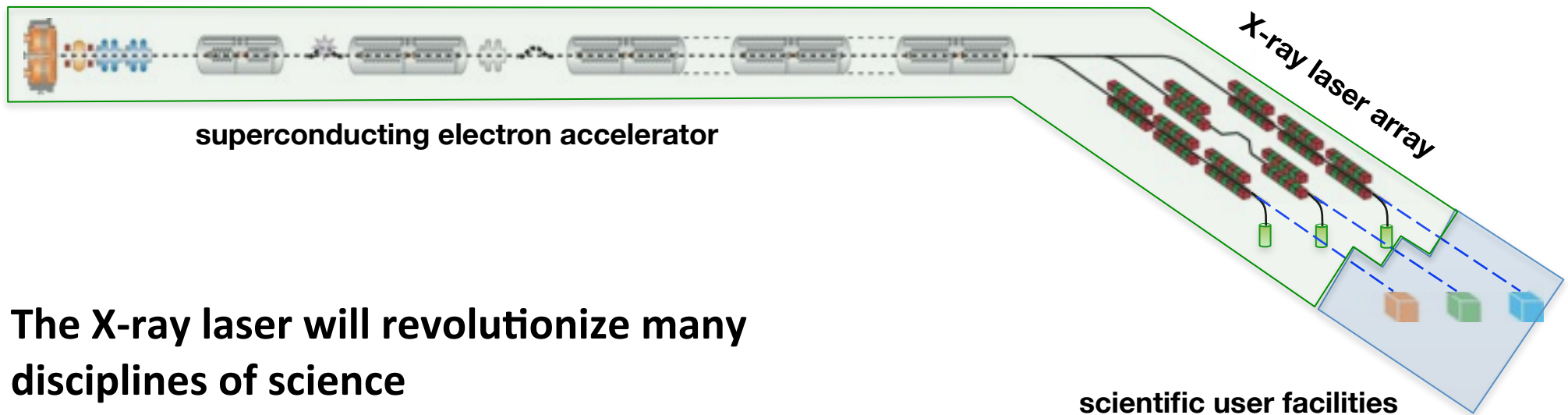
Photon Science for the future: The X-ray laser will transform energy research



Vision: Create and deploy measurement tools that open new realms of inquiry

- Foundational for energy research
- Deep integration with Materials, Chemical, Earth Sciences, Biosciences, Computing, Hubs, EFRCs...

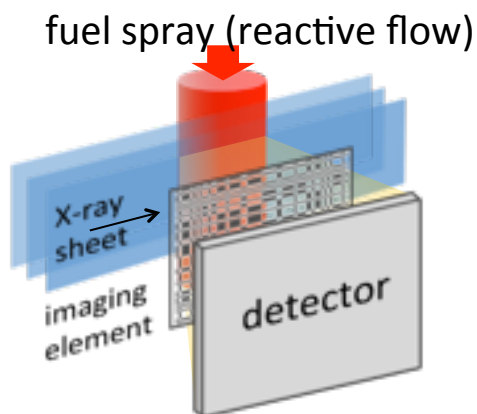
Next Generation Light Source



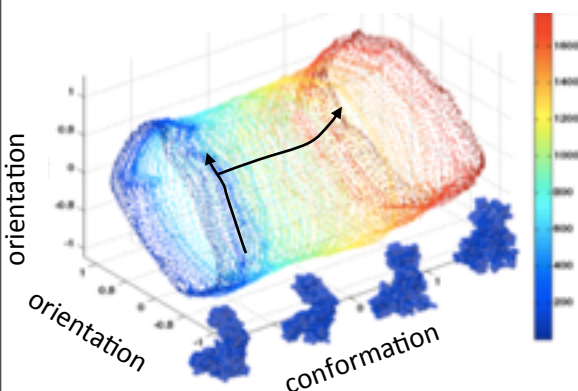
**The X-ray laser will revolutionize many
disciplines of science**

Photon science

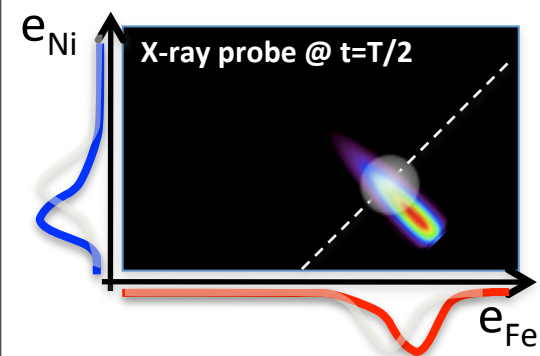
NGLS – a transformative tool for energy science



- **Imaging:** from stills to movies



- **Structure:** systems that *change* conformation or are heterogeneous

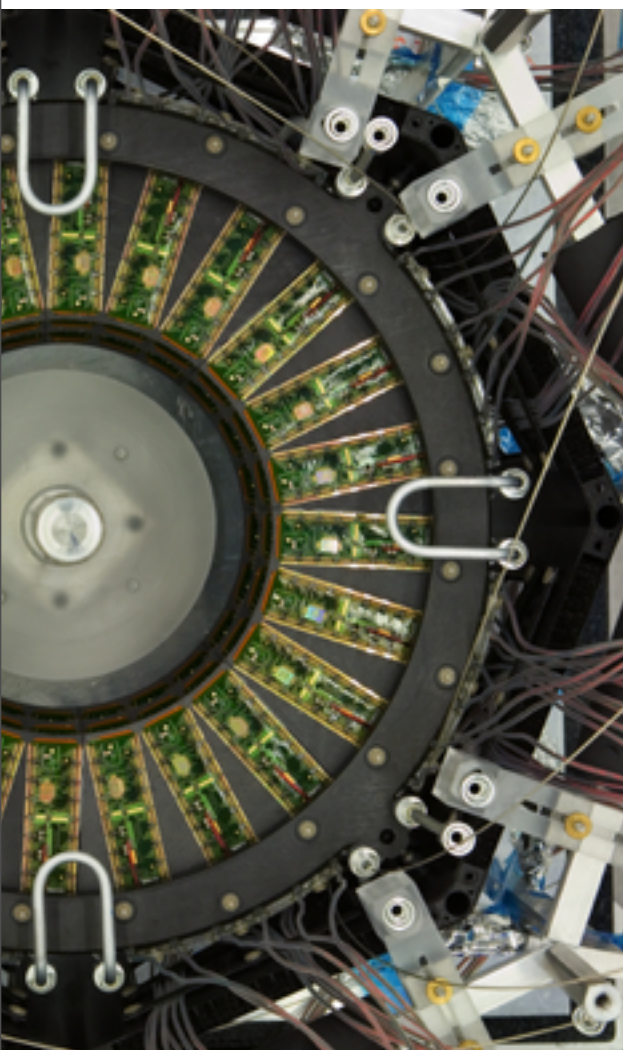


- **Spectroscopy:** multiple pulse techniques

More than 150 contributors representing more than 40 research institutions contributed to the NGLS CD-0 science case

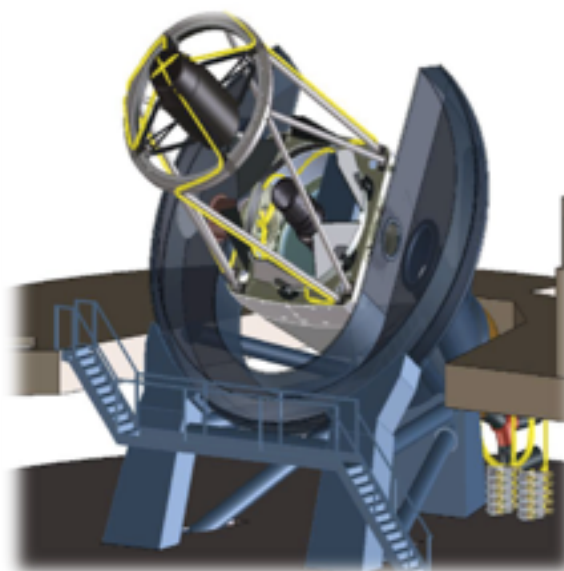
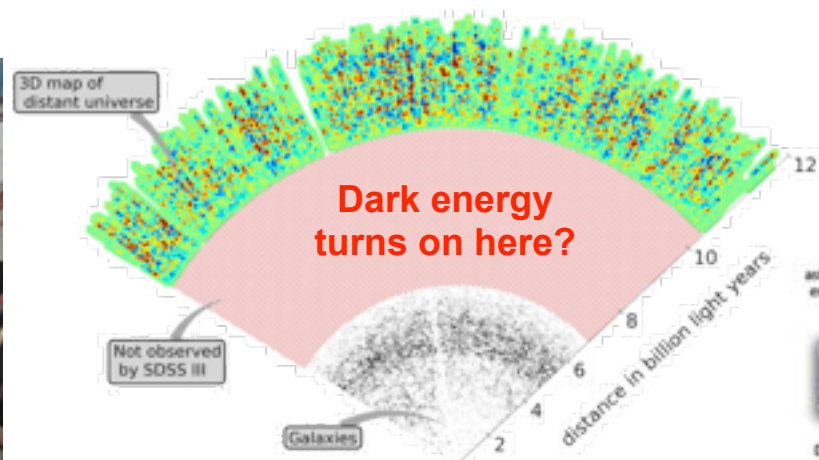


Energy



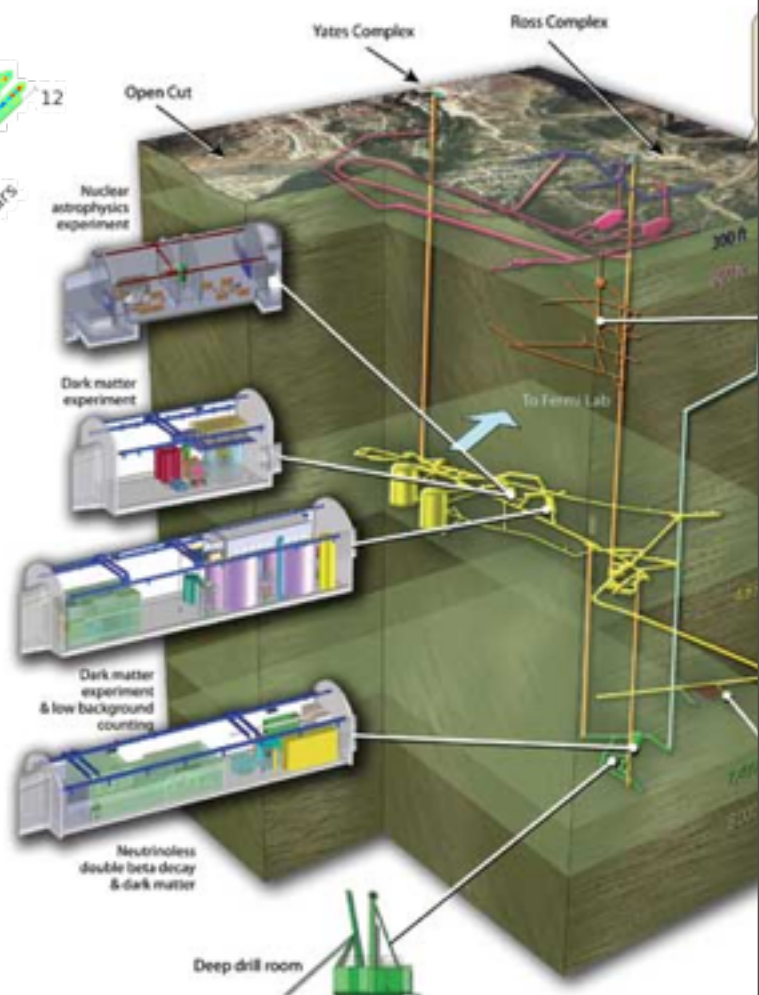
LHC / ATLAS

Cosmic



BigBOSS

Intensity

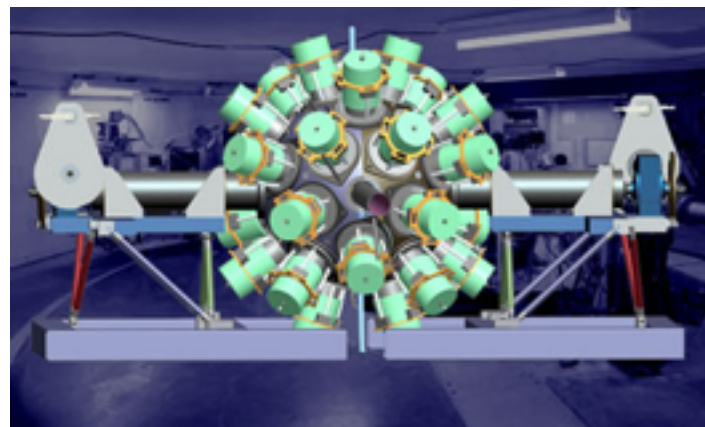


DUSEL

Berkeley Lab Nuclear Science



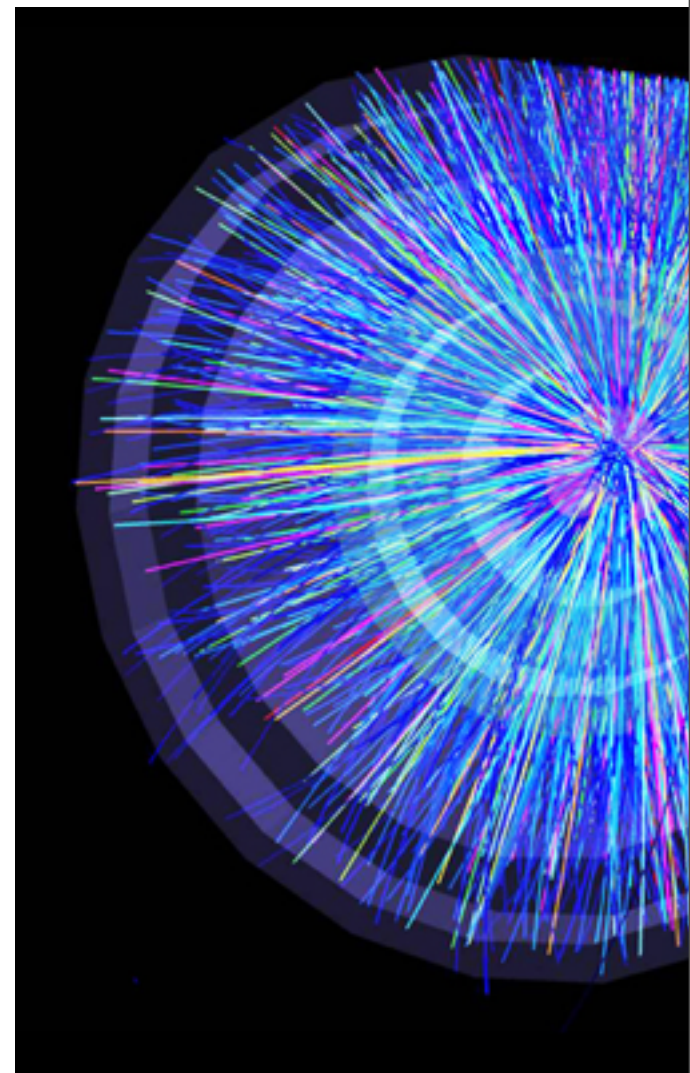
RHIC



GRETA



FRIB

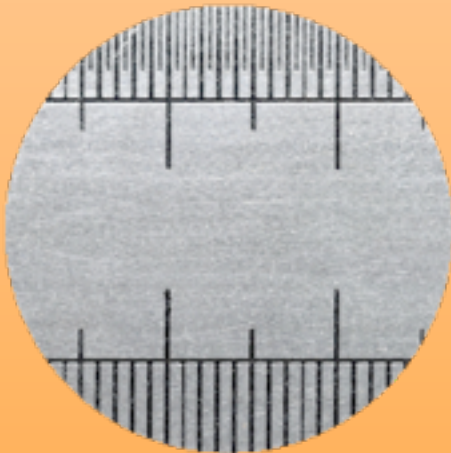


ALICE

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BIOSCIENCES INTEGRATION

Bio-energy, bio-environment, health research, will leverage dramatic advances in computation and synthetic biology



Bioscience consolidation first step to Bay Campus



some (but not all) potential second campus communities

Alameda

Oakland

Emeryville

Berkeley

Albany

Richmond





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COMPUTATION FOR THE BROAD SCIENCE COMMUNITY

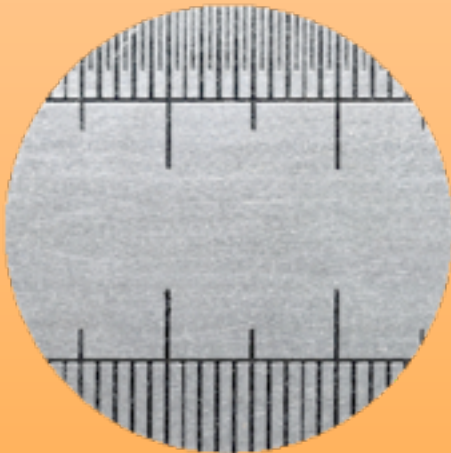


- Energy-efficient computing
- Applied math
- Massive parallelism and networking

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Office of Science Early Career Research Program

**Paul Alivisatos
Laboratory Director**

Monday, August 1, 2011

Overview

Third year of an annual DOE program to develop individual research programs with –

- **Outstanding** scientists,
- **Early** in their careers,
- Building research careers in **areas supported at Berkeley Lab by the DOE Office of Science**

The DOE/SC Early Career Research Program is an exceptional opportunity to build careers and programs at the Lab

2010 Program Results

- **22 national laboratory awards** and 47 university awards granted from pool of 1,750 applicants
- **Four awards** to Berkeley Lab scientists:
 - **Christian Bauer, Physics Division:** “GENEVA: An NLO event generator for the Large Hadron Collider”
 - **Delia Milliron, Materials Science Division/Molecular Foundry:** “Inorganic nanocomposite electrodes for electrochemical energy storage and energy conservation”
 - **Feng Yuan, Nuclear Science Division:** “Theoretical Investigation of Nucleon Structure”
 - **Feng Wang, UCB Physics/LBNL MSD:** “Control Graphene Electronic Structure for Energy Technology” (UCB Award)

2011 Program Results

- **22 national laboratory awards** and 47 university awards granted from pool of 1,150 applicants
- **Four awards** to Berkeley Lab scientists:
 - **Susannah Tringe, Genomics Division/Joint Genome Institute:** “Microbial communities in biological carbon sequestration”
 - **Haimei Zheng, Materials Sciences Division/National Center for Electron Microscopy:** “Real Time TEM Imaging of Materials Transformations in Liquid and Gas Environments”
 - **Junqiao Wu, UCB Professor of Materials Science and Engineering /LBNL Materials Sciences Division:** “Functional Domain Walls as Active Elements for Energy Technology” (UCB Award)

Basic Information for FY12

- Up to **\$10M** available for full-time researchers at DOE national laboratories
- **\$500K per year** is minimum (and typical) award
- **Proposed research must fit within scope of DOE Office of Science-funded programs -**
 - Advanced Scientific Computing Research
 - Biology and Environmental Research
 - Basic Energy Sciences
 - Fusion Energy Sciences
 - High Energy Physics
 - Nuclear Physics
- **conducted at Berkeley Lab**

Ask your division if your research idea is eligible

Who's Eligible to Apply

Berkeley Lab employees who are **full-time, non-postdoctoral** [within 10 years from Ph.D. (2001)], **Career or Career-Track**

Job Title	Employee Class	
	Term	Career
Project Scientist	X (not eligible)	N/A
Research Scientist	✓ (career track)*	✓*
Staff Scientist	✓ (career track)*	✓*
Divisional Fellow	✓ (career track)*	✓*
Senior Scientist	N/A	✓*

*Must be full time and within 10 years of receiving a Ph.D. (2001)

More important information

- Pre-proposals are **mandatory**; full proposals may **only** be submitted by proposers who are encouraged by DOE
- Project must be **directed and executed by individual** investigators
 - No Co-PI's; avoid paid collaborators
- Proposed program must dedicate a **minimum of 50% and up to 100%** of PI's salary
- **One proposal per PI**, per competition. PI may not participate (*submit full proposal*) in more than **three** SC ECRP competitions

What's New this Year

- Labs must ensure **pre-proposal** research ideas fit within the scope of SC-funded programs at Berkeley Lab
- Dedicated salary minimum has **been reduced to 50%** from 65% last year
- DOE/SC program opportunities call out **exclusions and priorities**
 - **Proposers need to check with their home divisions**
- A simplified LBNL administrative process will optimize proposal development and preparation time

Relevant Dates

- **September 1, 2011, 11:59pm Eastern Time**
 - **Mandatory pre-proposals** due to: <https://EarlyCareerPreapp.science.doe.gov>
- **October 3, 2011**
 - Deadline for DOE to email proposers **encouraging or discouraging** submission of formal proposals
- **November 29, 2010, 11:59pm Eastern Time**
 - **Full, formal proposals** due to DOE
- Internal deadlines are forthcoming

Contacts and Information

DOE **Administrative** contact: early.career@science.doe.gov

DOE **Technical** contacts: listed for each program in the DOE Announcement

Berkeley Lab Early Career Research Program website www.lbl.gov/dir/earlycareer includes:

- DOE National Laboratory announcement (LAB 11-572)
- Updates, reference and contact information
- “Town Hall” page with video of today’s event (to be posted)

Divisional Point of Contact

Division	Point of Contact	Email
AFRD	Glenna Rogers	GJRogers@lbl.gov
Advanced Light Source	Linda Griffin	LGriffin@lbl.gov
Computing Sciences	Sonia Ortiz	STOrtiz@lbl.gov
Chemical Sciences	Angela Gill	AAGill@lbl.gov
EETD	Robert Kostecki	R_Kostecki@lbl.gov
Engineering	Madonna Fricken	MRFricken@lbl.gov
Earth Sciences	Lisa Kelly	LMKelly@lbl.gov
Genomics/JGI	John Schiappacasse	JKSchiappacasse@lbl.gov
Life Sciences	Karen Dickinson-Mazzei	KDickinson@lbl.gov
Materials Sciences	Sally Nasman	SFNasman@lbl.gov
Nuclear Science	Ting Liu	TLiu@lbl.gov
Physical Biosciences	Shiela Dixson	SMDixson@lbl.gov
Physics	Miho Komai	MRKomai@lbl.gov

Information

www.lbl.gov/dir/earlycareer

Questions? Divisional POC or:

FundingOps@lbl.gov

Awardees Panel

2011 Awardees:

- **Susannah Tringe**, Genomics Division/Joint Genome Institute
 - “Microbial communities in biological carbon sequestration”
- **Haimei Zheng**, Materials Sciences Division/National Center for Electron Microscopy
 - “Real Time TEM Imaging of Materials Transformations in Liquid and Gas Environments”
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